8.) The Marine Terminal would only use water for fire fighting, so the renewal of thelease would not reduce the amount of water available for other public users.

9.) Tsunamis (seismic sea waves) are long period waves generated by underwater seismic events. Such waves would likely be generated west of the Golden Gate, and would be strongly attenuated as they entered the Bay. From 1854 to 1964 twenty-one such waves were recorded at the Fort Point tidal gauge, and it is estimated that a tsunami with a wave height of 20 feet could pass through the Golden Gate every 200 years (Chambers, 1994). Such a wave would have an estimated height of six to nine feet at the Shore Terminals facility (Chambers, 1994), which would not reach the deck of the wharf. If a vessel were moored at the wharf during such an event, however, it could be pushed into the wharf, causing it to collapse or result in a major pipeline or hull rupture.

10.) No thermal springs are on or adjacent to the site.

Discussion:

The Shore Terminals wharf is located on the south shore of Suisun Bay, approximately one mile east of the Benicia Bridge (GKO Messinger and Associates, 1994). It extends from shore out to the Bull's Head Channel, and is connected to the upland facilities by pipelines.

Biological Resources Introduction and Habitat Descriptions

The estuary that makes up San Francisco and Suisun Bays extends from the mouth of Coyote Creek, near San Jose, to Chipps Island at the eastern end of Suisun Bay. With a surface area of 1,240 km^2, it is the largest bay system on the Pacific coast of the United States. The estuary is located at the mouth of the Sacramento and San Joaquin Rivers which carry runoff from almost 40 per cent of California (Nichols, et al., 1986). It was once bordered by marsh along almost all of it's shoreline, but of the original 2,200 km^2, only 125 km^2 remains (Josselyn, 1993), the rest being diked or filled.

The estuary can be divided into three regions: Northern, Central and Southern. The southern section, reaching from the Golden Gate to San Jose, is only important in this document in the case of shipping accidents that cause a major spill, and is discussed in Section J, following. The Central Bay is bounded by the Richmond-San Rafael, Oakland and Golden Gate Bridges (Chambers, 1994). It is deeper than the other two sections, and more oceanic in character due to the large flow of water through the Golden Gate. The Northern section is the most important for this study, and includes San Pablo and Suisun Bays. It is considered a typical estuary, dominated by seasonally variable river inflows (Chambers, 1994). Ninety per cent of the fresh water that enters the Bay region comes through the Northern section from the Sacramento-San Joaquin River systems (Davis, 1982).

Water circulation in the estuary is driven by the freshwater inflows from the rivers and tidal circulation through the Golden Gate. The circulation arises from the density difference between